

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) A slot, array antenna, comprising:

a power feeding waveguide for feeding microwave power; and
a plurality of rectangular radiating waveguides connected to a plurality of windows which are disposed along the longitudinal direction of the power feeding waveguide, so as to guide the microwave power from the plurality of windows to the outside of the antenna;

wherein each of the radiating waveguides has a plurality of slots disposed along the longitudinal direction of the radiating waveguide; and the interval "d" between ~~the centers of gravity of slot pairs or adjacent~~ slots is substantially the same as the wavelength λm of the microwave in the rectangular radiating waveguide.

2. (Currently Amended) A slot array antenna according to claim 1, wherein the interval "d" between ~~the centers of gravity of slot pairs or adjacent~~ slots is in the range of $0.75 \leq \lambda m \leq 1.25$ $0.75 < d/\lambda m < 1.25$, with respect to the wavelength λm of the microwave.

3. (Currently Amended) A slot array antenna according to claim 1 or 2, wherein the dielectric constant of a dielectric material disposed in the radiating waveguide is 1 or more.

4. (Currently Amended) A slot array antenna according to ~~any one of claims 1 to 3~~ claim 1, wherein the ~~power feeding~~ power-feeding waveguide is a rectangular waveguide.

5. (Currently Amended) A slot array antenna according to ~~any one of claims 1 to 3~~ claim 1, wherein a traveling wave is to be generated in the radiating waveguide.

6. (Currently Amended) A slot array antenna according to ~~any one of claims 1 to 3~~ claim 1, wherein a matching slot is disposed at the terminal end of the radiating waveguide.

7. (Currently Amended) A slot array antenna according to ~~any one of claims 1 to 6~~ claim 1, wherein the slots formed on one side of the radiating waveguide are disposed such that they [[are]] gradually deviated deviate from the center axis in the longitudinal direction of the radiating waveguide.

8. (Currently Amended) A slot array antenna according to ~~any one of claims 1 to 7~~ claim 1, wherein the slots provided on one side of the radiating waveguide are such that they form an inclination angle of 45° relative to the center axis in the longitudinal direction of the radiating waveguide.

9. (Currently Amended) A slot array antenna according to ~~any one of claims 1 to 8~~ claim 1, wherein a slit having a variable width is disposed at the ~~power feeding~~ power-

feeding portions for feeding power from the ~~power feeding~~ power-feeding waveguide to the radiating waveguide.

10. (Currently Amended) A slot array antenna according to ~~any one of claims 1 to 9~~ claim 1, wherein the slots formed on one side of the radiating waveguide are selected from the group consisting of: slots perpendicular to the traveling direction of the electromagnetic field, slot pairs in the form of "staggered Λ", and slot pairs each of which is inclined at about 45° with respect to the traveling direction of the electromagnetic field.

11. (Currently Amended) A plasma processing apparatus comprising:
a plasma processing chamber for subjecting an object ~~to be processed~~ to a plasma treatment; and
antenna means for guiding microwave power into the plasma processing chamber so as to generate plasma in the plasma processing chamber;
wherein the antenna means comprises: a ~~power feeding~~ power-feeding waveguide for feeding microwave power; and a plurality of rectangular radiating waveguides connected to a plurality of windows which are disposed along the longitudinal direction of the ~~power feeding~~ power-feeding waveguide, so as to guide the microwave power from the plurality of windows to the outside of the antenna, wherein each of the radiating waveguides has a plurality of slots disposed along the longitudinal direction of the radiating waveguide; and the interval "d" between ~~the centers of gravity~~

of slot pairs or adjacent slots is substantially the same as the wavelength λ_m of the microwave in the rectangular radiating waveguide.

12. (Currently Amended) A plasma processing apparatus according to claim 11, wherein the interval "d" between the centers of gravity of slot pairs or adjacent slots is in the range of $0.75 \leq \lambda_m \leq 1.25$ $0.75 < d/\lambda_m < 1.25$, with respect to the wavelength λ_m of the microwave.